

Annotated checklist of Sarcophagidae (Diptera) of Jamaica, with new records

Latoya Foote-Gordon¹, Eric Garraway¹, Thomas Pape², Eliana Buenaventura³

¹ Department of Life Sciences, University of the West Indies, Mona, Kingston, Jamaica

² Natural History Museum of Denmark, Copenhagen, Denmark

³ Grupo de Entomología Universidad de Antioquia – GEUA, Universidad de Antioquia, Medellín, Colombia

Corresponding author: Latoya Foote-Gordon (latoyafoote@yahoo.com)

Abstract

An annotated checklist of the Sarcophagidae of Jamaica is presented based on material collected from 2018 to 2024, supplemented with specimens in museum collections as well as literature records. The checklist comprises 45 species from 21 genera, of which 23 species from 15 genera were collected during the present study and identified based on male terminalia. The following species are recorded from Jamaica for the first time: *Bahamiola orbitalis* Dodge, *Peckia* (*Sarcodexia*) *dominicana* (Lopes), *Tapacura mariarum* Tibana & Lopes, and *Lepidodexia* (*Harpagopyga*) *diversipes* (Coquillett).

Key words: Caribbean, checklist, diversity, flesh flies, Jamaica, Miltogramminae, Sarcophaginae, taxonomy



Academic editor: Filippo Di Giovanni

Received: 30 August 2024

Accepted: 24 October 2024

Published: 13 December 2024

ZooBank: <https://zoobank.org/6B22A82F-C506-4232-8020-72CD1410DB01>

Citation: Foote-Gordon L, Garraway E, Pape T, Buenaventura E (2024) Annotated checklist of Sarcophagidae (Diptera) of Jamaica, with new records. ZooKeys 1221: 175–203. <https://doi.org/10.3897/zookeys.1221.135698>

Copyright: © Latoya Foote-Gordon et al.
This is an open access article distributed under terms of the Creative Commons Attribution License ([Attribution 4.0 International – CC BY 4.0](https://creativecommons.org/licenses/by/4.0/)).

Introduction

The family Sarcophagidae or flesh flies is a diverse family of Diptera, currently with 172 genera and 3094 described species (Pape et al. 2011; Buenaventura and Pape 2013), which are classified into three subfamilies: Miltogramminae, Paramacronychiinae, and Sarcophaginae. Members of the family are diverse in their feeding habits, including coprophagy, parasitism, predation and necrophagy (Lopes 1982; Mullen et al. 1984; Ferrar 1987; Bänziger and Pape 2004; Vairo et al. 2015; Buenaventura 2021).

Flesh flies of the large subfamily Sarcophaginae show a variable degree of synanthropy or preference for human-modified environments (Beltran et al. 2012; Yepes-Gaurisas et al. 2013; Valverde-Castro et al. 2017; Buenaventura et al. 2021a), and several species have importance for forensic sciences (Oliveira and Vasconcelos 2010; Segura et al. 2011; Cherix et al. 2012; Szpila et al. 2015; Villet et al. 2017), while others may be mechanical carriers of pathogens (Sukontason et al. 2006) or play a role as general (Howlett et al. 2016) or more specific (Wisniewska et al. 2019) pollinators. Flesh flies are hypothesized to have originated in the Neotropical region (Buenaventura et al. 2021b; Buenaventura 2021; Yan et al. 2021), with species predominantly belonging to the subfamily Sarcophaginae. However, further research is warranted to elucidate their evolutionary history, ecological roles and geographical distribution.

This paper aims to update the list of species of Sarcophagidae from Jamaica based on data obtained from recent collections (2018–2024), specimens in the insect collection in the Department of Life Sciences of the University of the West Indies (**DLSUWI**) and the Natural History Museum of Jamaica (**NHMJ**), and literature records. Research on Sarcophagidae diversity from Caribbean islands has yielded the numbers given in Table 1.

Table 1. Sarcophagidae diversity of Caribbean Islands.

Caribbean Island	Number of Species
Antigua (Pape 1996)	1
Barbados (Pape 2024)	1
Cayman Island (Pape 1996)	1
Curaçao (Pape 2024)	1
Guadeloupe (Pape 1996)	2
Grenadines (Pape 1996)	2
St. Lucia (Pape 1996)	3
St. Vincent (Pape 1996)	5
British Virgin Islands (Pape 1996)	4
United States Virgin Islands (Pape 1996)	4
Turks and Caicos Island (Pape 1996)	7
Haiti (Pape 1996)	8
Martinique (Pape 1996)	9
Puerto Rico (Curran 1928)	30
Dominica (Pape 2024)	36
Trinidad & Tobago (Pape 2024)	39
Jamaica (Dodge 1965b; Pape 1989)	39
Bahamas (Dodge 1965a)	43
Cuba (Pape 2024)	55

To date, there are no records of Sarcophagidae species on Caribbean islands such as St. Kitts and Nevis and Grenada. However, the number of flesh fly species documented in the Caribbean archipelago is expected to increase with further field research and more intensive sampling efforts.

Dodge (1965b) provides the most comprehensive documentation of Jamaican Sarcophagidae, recording 39 species, 16 of which were described as new. Few collections or biological observations of Sarcophagidae have been documented from Jamaica since the 1960s (Freeman and Taffe 1974; Freeman and Jayasingh 1975; Pape 1989; Foote 2014; Foote-Gordon and Garaway 2023a, 2023b, 2023c), and the knowledge of Jamaican Sarcophagidae is certainly incomplete.

This research aims to expand the understanding of flesh fly diversity and distribution in Jamaica through comprehensive field collections, a systematic review of historical literature, and the analysis of museum specimens housed at the Natural History Museum of Jamaica and the Department of Life Sciences of the University of the West Indies.

Materials and methods

Study area

Jamaica is situated in the tropical zone approximately 18 degrees north of the equator and is part of the archipelago of the Caribbean Islands. The island measures 232 km in length, with a width ranging from approximately 48 to 80 km and encompasses an area of 10,992 km² (Wilson 2004).

The study area encompasses twelve habitat types (Table 2), such as coastal and freshwater mangrove forests, dry and wet limestone forests, wet and dry forests, wet and dry montane forests, inland wetlands, urban and suburban communities, and rural farms. A total of 17 sampling localities were selected across these habitat types (Fig. 1, Table 2).

Table 2. List of sampling localities of Sarcophagidae in Jamaica between 2018 and 2024.

	Locality	Geographic coordinates	Altitude (m)	Habitat description
A	Merrywood, St. Elizabeth	18°13'04"N, 77°51'02"W	220	Rural farm
B	Windsor, Trelawny	18°21'09"N, 77°38'47"W	98	Wet limestone forest
CD	Rio Bueno property, St. Ann	18°28'30"N, 77°26'41"W	25	Dry limestone forest
		18°28'01"N, 77° 27'51"W	10	Solitary wasp nest
E	Belair, St. Ann	18°27'23"N, 77°21'08"W	15	Dry limestone forest
F	Green Grotto, St. Ann	18°05'15"N, 77°24'57"W	15	Freshwater mangrove forest
G	Roaring River, St. Ann	18°24'52"N, 77°09'32"W	94	Dry limestone forest
H	Hardware Gap, Portland	18°05'15"N, 76°42'13"W	1050	Wet montane forest
I	Comfort Castle, Portland	18°03'14"N, 76°24'46"W	147	Wet montane forest, rural/farm community
J	Bowden Pen, St. Thomas	18°02'27"N, 76°23'55"W	290	Wet limestone forest
K	Salt Hill, St. Andrew	18°02'00"N, 76°40'29"W	1210	Dry montane forest and farmlands
L	Red Light, St. Andrew	18°03'36"N, 76°43'23"W	988	Dry forest and suburban community
M	Mona, St. Andrew	18°00'22"N, 76°45'00"W	180	Urban community
N	Port Royal, St. Andrew	17°56'29"N, 76°50'02"W	4	Coastal mangrove forest
O	Newport, Manchester	17°57'17"N, 77°29'41"W	715	Suburban community
PQ	Mason River, Clarendon	18°11'47"N, 77°15'35"W	700	Inland wetland

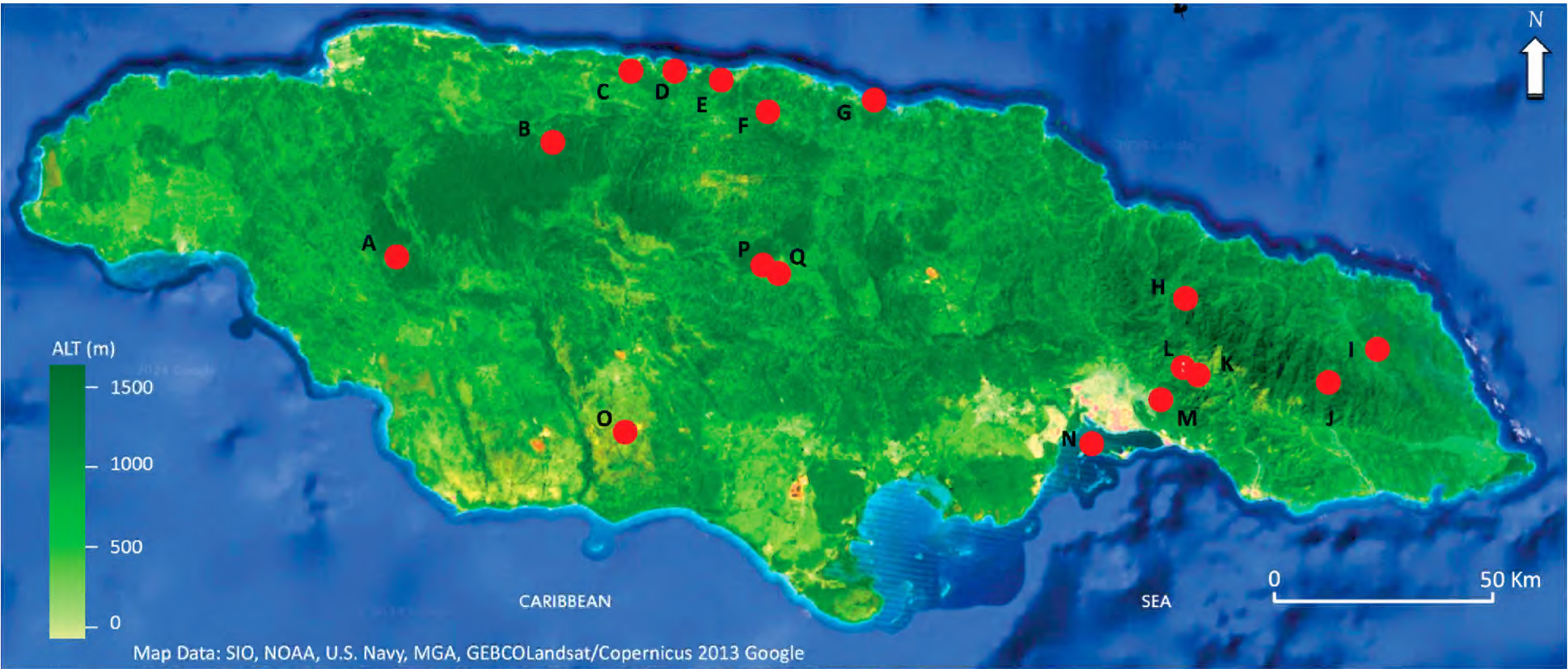


Figure 1. Distribution of sampling sites in Jamaica between 2018 and 2024. **A** Merrywood, St. Elizabeth; **B** Windsor, Trelawny; **C, D** Rio Bueno, St. Ann; **E** Belair, St. Ann; **F** Green Grotto, St. Ann; **G** Roaring River, St. Ann; **H** Hardware Gap, Portland; **I** Comfort Castle, Portland; **J** Bowden Pen, St. Thomas; **K** Salt Hill, St. Andrew; **L** Red Light, St. Andrew; **M** Mona, St. Andrew; **N** Port Royal, St. Andrew; **O** Newport, Manchester; **P, Q** Mason River, Clarendon.

Specimen sampling, identification, and documentation

Field expeditions were carried out between 2018 and 2024. Sample collection was conducted throughout the year, regardless of rainy and dry seasons, depending on the availability of resources. Many of the flies were collected with Van Someren-Rydon (VSR) traps and plastic bottle traps (Hwang and Turner 2005), and a few were collected with hand nets. Traps were baited separately with various decomposing meats, such as chicken and pork, and fermented fruits. At each site, two VSR traps were placed at a minimum height of 1.5 m above ground and spaced at least 50 m apart. The traps were left in place for a minimum of 4 h and a maximum of 12 h.

Specimens were collected and preserved in 95% ethanol. Flesh flies were carefully pinned, and their terminalia extended for detailed examination and taxonomic identification. Taxonomic identifications were made of males only, as females are difficult to identify. Taxonomic keys, descriptions, and illustrations by Dodge (1965a, b), Giroux and Wheeler (2009), and Buenaventura and Pape (2013) were used to identify species.

Neotropical distribution data were taken from ‘A taxonomic database to all flesh flies’ (Pape 2024), and distribution in Jamaica is based on the specimens collected during the present study and specimens from the insect collections of the Department of Life Sciences, University of the West Indies (**DLSUWI**) and the Natural History Museum of Jamaica (**NHMJ**).

Photographs of male terminalia were produced with a Leica M205 C stereo microscope system camera.

Format of checklist

The checklist is arranged in alphabetical order, first by subfamily, then by genus and species. Each species entry starts with a valid species name, the authority, and the year of publication. For all collected specimens and museum material, the following information is recorded: locality and date of collection, number and sex of specimens, collector(s), and depository. Entries are separated by semicolons. For localities with multiple hierarchical levels, a comma separates the exact sampling site from the main locality or parish. Species previously recorded from Jamaica have their published records listed in a section titled “Literature records”, while species recorded from Jamaica for the first time are indicated as “New records.” For each species, the general distribution within the Neotropical region is also provided. Remarks are included when applicable.

Results

A total of 731 specimens of flesh flies from Jamaica were examined from field expeditions, which included 325 females and 406 males, with 45% of the males belonging to only four species (Table 3). The survey revealed new records of flesh flies for the island, namely *Bahamiola orbitalis* Dodge, 1965, *Peckia* (*Sarcodexia*) *dominicana* Lopes, 1982, *Tapacura mariarum* Tibana & Lopes, 1985, and *Lepidodexia* (*Harpagopyga*) *diversipes* (Coquillett, 1900). These new records increased the total number of flesh fly species known

Table 3. Abundance and distribution of the most common and widespread species during the study. Only males are included.

Species	Number of individuals	Localities
<i>Bahamiola orbitalis</i>	94	5
<i>Oxysarcodexia peltata</i>	46	10
<i>Peckia chrysostoma</i>	29	8
<i>Peckia nicasia</i>	14	6

from the country to 45 (Table 4). Most of the species belong to the genus *Peckia* Robineau-Desvoidy, 1830 with six species, followed by *Oxysarcodexia* Townsend, 1917 with three species. The remaining 13 genera are represented by one or two species each. The rarest species found within the genus *Peckia* are *Peckia (Euboettcheria) buethni* (Dodge, 1965) and *Peckia (Peckia) hillifera* (Aldrich, 1916), each with only one individual, found in Rio Bueno, St. Ann and in Belair, St. Ann, respectively.

Checklist

Subfamily Miltogramminae Lioy, 1864
Genus *Amobia* Robineau-Desvoidy

1. *Amobia floridensis* (Townsend, 1892)

Literature records. Dodge (1965b); Lopes (1969); Freeman and Taffe (1974); Freeman and Jayasingh (1975); Pape (1996).
Neotropical distribution. Belize, Brazil, Costa Rica, Cuba, Ecuador, Galápagos Is, Guyana, Jamaica, Panama, Peru, Puerto Rico, Trinidad & Tobago, Venezuela.

Genus *Metopia* Meigen

2. *Metopia argyrocephala* (Meigen, 1824)

Literature records. Johnson (1919, as *Metopia leucocephala*); Gowdey (1926); Dodge (1965b); Lopes (1969); Pape (1996).
Neotropical distribution. Belize, Cuba, Dominican Republic, Ecuador, El Salvador, Guatemala, Jamaica, Mexico, Peru, Puerto Rico.
Newly collected material. • Rio Bueno Property, St. Ann; 31 May 2018; 1 ♂; E. Buenaventura leg. (DLSUWI).
Remarks. Collected during the present study with a sweep net near nests of solitary wasps.

Genus *Opsidia* Coquillett

3. *Opsidia jamaica* Pape, 1989

Literature records. Pape (1989); Pape (1996).
Neotropical distribution. Jamaica.

Genus *Senotainia* Macquart

4. *Senotainia rubriventris* Macquart, 1846

Literature records. Johnson (1919); Dodge (1965b); Lopes (1969); Pape (1996).

Neotropical distribution. Bahamas, Jamaica, Puerto Rico.

5. *Senotainia trilineata* (Wulp, 1890)

Literature records. Johnson (1919); Dodge (1965b); Lopes (1969); Pape (1996).

Neotropical distribution. Bahamas, Costa Rica, El Salvador, Jamaica, Mexico, Nicaragua, Peru.

Subfamily Sarcophaginae Macquart, 1834

Genus *Argoravinia* Townsend, 1917

6. *Argoravinia candida* (Curran, 1928)

Literature records. Dodge (1965b); Lopes (1969); Pape (1996); Carvalho-Filho and Esposito (2012).

Neotropical distribution. Cuba, Jamaica, Puerto Rico.

7. *Argoravinia rufiventris* (Wiedemann, 1830)

Literature records. Dodge (1965b, as *Argoravinia modesta*); Lopes (1969); Pape (1996); Livingstone (2006); Dufek et al. (2015); Sousa et al. (2015).

Neotropical distribution. Argentina, Brazil, Colombia, Jamaica, Trinidad & Tobago.

Newly collected material. • Mona, St. Andrew; 06 Sep. 2018; 46 ♂; L. Foote leg. (DLSUWI).

Museum material. • Rio Cobre, St. Catherine; 23 Sept. 1954; 1 ♂; T. H. Farr leg. (NHMJ).

Remarks. Found associated with corpses, hence of potential forensic importance (Dufek et al. 2015). It is known to infest turtle eggs (Smith 2001; Livingstone 2006). In the current study, it was collected in VSR traps containing decomposing chicken. It has been collected from the carcasses of bears, deer and swine in Louisiana using pitfall traps and manual sampling (Grindley-Watson 2004). *Argoravinia rufiventris* is associated with human faeces, fish and bovine spleen (Barbosa 2019). It is also collected from pig carcasses (Barros et al. 2008).

Genus *Bahamiola* Dodge, 1965

8. *Bahamiola orbitalis* Dodge, 1965

Neotropical distribution. Bahamas, Jamaica (New record).

Newly collected material. • Windsor, Trelawny; 01 Jun. 2018; 38 ♂; L. Foote and E. Buenaventura leg. (DLSUWI) • Green Grotto, St. Ann, 31 May 2018; 19 ♂;

L. Foote and E. Buenaventura leg. (DLSUWI) • Belair, St. Ann; 31 May 2018; 16 ♂; L. Foote and E. Buenaventura leg. (DLSUWI) • Rio Bueno Property, St. Ann; 31 May 2018; 2 ♂; L. Foote and E. Buenaventura leg. (DLSUWI) • Red Light, St. Andrew; 19 Mar. 2024; 19 ♂; L. Foote leg. (DLSUWI).

Remarks. The genus contains two species, *Bahamiola orbitalis* and *Bahamiola gregori* Rohdendorf, 1971. This study presents the first record of the genus and species in Jamaica. It was collected in VSR traps with decomposing chicken and was the most frequently collected species during the study.

Genus *Blaesoxipha* Loew, 1861

9. *Blaesoxipha* (*Kellymyia*) *jamacoorum* (Dodge, 1965)

Fig. 2

Literature records. Dodge (1965b); Lopes (1969); Pape (1996).

Neotropical distribution. Jamaica.

Newly collected material. • Roaring River, St. Ann; 19 Oct. 2018; 2 ♂; L. Foote leg. (DLSUWI) • Mason River, Clarendon; 26 Nov. 2019; 1 ♂; L. Foote leg. (DLSUWI) • Red Light, St. Andrew; 19 Mar. 2024; 3 ♂; L. Foote leg. (DLSUWI).



Figure 2. *Blaesoxipha* (*Kellymyia*) *jamacoorum*. Male terminalia, lateral view; endemic to Jamaica. Scale bar: 1 mm.

Museum material. • Mocho, Clarendon; 16 Nov. 1978; 1 ♂; J. Simpson leg. (DLSUWI) • Jacksonville; 05 Oct 1997; 1 ♂; M. Peddie leg. (DLSUWI) • Highgate, St. Mary; 05 Oct. 2008; 1 ♂; M. Grant leg. (DLSUWI) • Windsor, Trelawny; 28 Sep. 2014; 1 ♂; D. Wilkins leg. (DLSUWI) • Lewisburg, St. Mary; 18 Oct. 2015; 1 ♂; Heslop leg. (DLSUWI) • Halse Hall, Clarendon; Mona, St. Andrew; 27 Oct. 2016; 2 ♂; K. Minott leg. (DLSUWI).

Remarks. Collected on overripe mango fruit by Dodge (1965b). In this study, it was collected from decomposing chicken and pork.

10. *Blaesoxipha (Gigantotheca) plinthopyga* (Wiedemann, 1830)

Literature records. Johnson (1919); Lopes (1941); Dodge (1965b); Pape (1996); Mello-Patiu (2016).

Neotropical distribution. American Virgin Is, Bahamas, Brazil, Costa Rica, Cuba, Dominica, Dominican Republic, El Salvador, Galápagos Is, Guatemala, Guyana, Jamaica, México, Nicaragua, Panamá, Puerto Rico, Venezuela.

Newly collected material. • Mona, St. Andrew; 26 Jun. 2018; 10 ♂; L. Foote leg. (DLSUWI).

Museum material. • Morant Bay, St. Thomas; 28 Jan. 1989; 1 ♂; (DLSUWI) • Stony Hill, St. Andrew; 17 May 1992; 1 ♂; J. Rodent leg. (DLSUWI) • Meadowbrook Estate, Kingston; 21 Oct 2003; 1 ♂; C. McIntosh leg. (DLSUWI) • Spanish Town, St. Catherine; 18 Nov. 2006; 1 ♂; T. McIntyre leg. (DLSUWI) • Havendale, Kingston; 09 Nov. 2011; 1 ♂; P. Sutherland leg. (DLSUWI) • Mona, St. Andrew; 17 Mar. 2015; 2 ♂; Gilles-Lee leg. (DLSUWI) • Downtown, Kingston; 07 Nov. 1946; 2 ♂, 5 ♀; G. B. Thomspen leg. (NHMJ) • Downtown, Kingston; 18 Dec. 2013; 6 ♂, 4 ♀; L. Wright leg. (NHMJ).

Remarks. This widely distributed species was reported on a human corpse in the USA (Wells and Smith 2013), and it is considered medically and forensically important (Barbosa 2019). Dodge (1965b) mentions specimens that were “bred from dead crocodile.” During the study period, it was reared from buried pork bait in Jamaica.

Genus *Boettcheria* Parker, 1914

11. *Boettcheria parkeri* (Aldrich, 1916)

Fig. 3

Literature records. Johnson (1919); Dodge (1965b); Lopes (1969); Pape (1996).

Neotropical distribution. Jamaica.

Newly collected material. • Bowden Pen, St. Thomas; 05 Jun. 2018; 7 ♂; E. Buenaventura leg. (DLSUWI) • Salt Hill, St. Andrew; 26 Feb. 2024; 1 ♂; L. Foote leg. (DLSUWI).

Museum material. • Hermitage Reservoir, St. Andrew; 30 May 1954; 2 ♂; T. H. Farr leg. (NHMJ) • Corn Puss Gap, St. Thomas; 04 Aug. 1948; 1 ♂; R. P. Bengry leg. (NHMJ) • Unity Valley, St. Ann; 14 Nov. 1954; 1 ♂; T. H. Farr leg. (NHMJ).

Remarks. *Boettcheria parkeri* is still the only species of *Boettcheria* known from Jamaica (Pape 1996), and as for most other species in this genus, the biology is unknown. It was collected in a VSR trap baited with decomposing



Figure 3. *Boettcheria parkeri*. Male terminalia, lateral view; endemic to Jamaica. Scale bar: 1 mm.

chicken and pork. Members of the genus are often listed as carrion flies (Ramírez-Mora et al. 2012) and are found in a variety of habitats, from old-growth forests to urban areas (Dahlem and Downes 1996).

Genus *Chrysagria* Townsend

12. *Chrysagria duodecimpunctata* Townsend, 1935

Literature records. Dodge (1965b, as *Sarcophahrtiomyia tenta*); Lopes (1969, as *Sarcophahrtiomyia tenta*); Pape (1996); Mello-Patiu (2016).

Neotropical distribution. Argentina, Brazil, Colombia, Dominica, Ecuador, Guatemala, Jamaica, Mexico, Peru.

Genus *Dexosarcophaga* Townsend, 1917

13. *Dexosarcophaga ruthae* (Dodge, 1965)

Literature records. Dodge (1965b); Lopes (1969); Mello (1996); Pape (1996).

Neotropical distribution. Jamaica.

Remarks. The type series was collected “over broken nest of *Nasutitermes*” (Dodge 1965b).

Genus *Helicobia* Coquillett, 1895

14. *Helicobia morionella* (Aldrich, 1930)

Literature records. Dodge (1965b); Lopes (1969); Pape (1996); Mello-Patiu (2016); Dufek (2019); Dufek et al. (2020).

Neotropical distribution. American Virgin Is, Argentina, Bahamas, Brazil, Colombia, Costa Rica, Cuba, Dominica, Ecuador, El Salvador, Guatemala, Haití, Jamaica, México, Puerto Rico, Venezuela.

Newly collected material. • Rio Bueno Property, St. Ann; 31 May 2018; 1 ♂; L. Foote and E. Buenaventura leg. (DLSUWI) • Belair, St. Ann; 31 May 2018; 1 ♂; L. Foote and E. Buenaventura leg. (DLSUWI).

Museum material. • Windsor Hotel, St. Ann; 19 Mar. 1955; 1 ♂; T. H. Farr leg. (NHMJ) • Ferry, St. Andrew, 30 Oct. 1946; 1 ♂; G. B. Thompson leg. (NHMJ) • Ferry, St. Andrew; 03 Oct. 1954; 2 ♂; T. H. Farr leg. (NHMJ) • Mona, St. Andrew; 20 Jan. 1947; 2 ♂; G. B. Thompson leg. (NHMJ).

Remarks. This necrophagous species is considered to be of forensic importance (Early and Goff 1986). It was collected from a decomposing crab and decomposing chicken in the present study.

15. *Helicobia rapax* (Walker, 1849)

Literature records. Johnson (1919, as *Sarcophaga helici*); Dodge (1965b); Lopes (1969); Pape (1996); Mello-Patiu (2016).

Neotropical distribution. Argentina, Belize, Brazil, Cuba, Dominica, Ecuador, El Salvador, Jamaica, Martinique, Mexico, Panama, Peru, Puerto Rico.

Museum material. • Road to Holly Mount, St. Andrew; 24 Sept. 1954; 1 ♂; R. P. Bengry leg. (NHMJ) • Mona, St. Andrew; 30 Jan. 1947; 1 ♂; G. B. Thompson leg. (NHMJ) • Half Way Tree, St. Andrew; 06 Aug. 1950; 1 ♂; R. B. Bengry leg. (NHMJ) • Troy, Trelawny; 25 Sept. 1954; 1 ♂; T. H. Farr leg. (NHMJ).

Genus *Lepidodexia* Brauer & Bergenstamm, 1891

16. *Lepidodexia* (*Harpagopyga*) *albihirta* (Dodge, 1965)

Literature records. Dodge (1965b); Lopes (1969); Pape (1996).

Neotropical distribution. Jamaica.

17. *Lepidodexia* (*Harpagopyga*) *atrata* (Dodge, 1965)

Literature records. Dodge (1965b); Lopes (1969); Pape (1996).

Neotropical distribution. Jamaica.

18. *Lepidodexia* (*Harpagopyga*) *dissimilis* (Dodge, 1965)

Literature records. Dodge (1965b); Lopes (1969); Pape (1996)

Neotropical distribution. Jamaica.

19. *Lepidodexia* (*Harpagopyga*) *diversipes* (Coquillett, 1900)

Neotropical distribution. Cuba, Puerto Rico, Jamaica (New record).

Museum material. Hardware Gap, Portland; 27 Jul. 1949; 1 ♂; C. B. Lewis leg. (NHMJ).

20. *Lepidodexia (Harpagopyga) nigribimbo* (Dodge, 1965)

Literature records. Dodge (1965b); Lopes (1969); Pape (1996).

Neotropical distribution. Jamaica.

21. *Lepidodexia (Harpagopyga) villipes* (Dodge, 1965)

Literature records. Dodge (1965b); Lopes (1969); Pape (1996).

Neotropical distribution. Jamaica.

Genus *Oxysarcodexia* Townsend, 1917

22. *Oxysarcodexia bakeri* (Lopes, 1945)

Literature records. Dodge (1965b); Lopes (1969); Pape (1996); Mello-Patiu (2016); Souza et al. (2020).

Neotropical distribution. Bahamas, Brazil, Chile, Colombia, Cuba, Dominica, Ecuador, El Salvador, Galápagos Is, Guadeloupe, Haití, Honduras, Jamaica, México, Panamá, Puerto Rico, Turks & Caicos Is, Venezuela.

Newly collected material. • Belair, St. Ann; 31 May 2018; 1 ♂; L. Foote and E. Buenaventura leg. (DLSUWI) • Green Grotto, St. Ann; 31 May 2018; 1 ♂; L. Foote and E. Buenaventura leg. (DLSUWI) • Merrywood, St. Elizabeth; 24 May 2021; 1 ♂; R. Daley leg. (DLSUWI) • Newport, Manchester; 18 Aug. 2023; 1 ♂; R. Daley leg. (DLSUWI) • Red Light, St. Andrew; 20 Mar. 2024; 1 ♂; L. Foote leg. (DLSUWI) • Comfort Castle, Portland; 27 Mar. 2024; 1 ♂; L. Foote leg. (DLSUWI).

Museum material. • Cross Roads, St. Andrew; 05 Sep. 1954; 2 ♀, 1 ♂; T. H. Farr leg. (NHMJ) • Rio Cobre, St. Catherine; 28 Feb. 1954; 1 ♀; T. H. Farr leg. (NHMJ) • Negril, Westmoreland; 19 Jul. 1954; 1 ♀; T. H. Farr leg. (NHMJ) • Molland Bay, St. Thomas; 28 Nov. 1954; 1 ♂; T. H. Farr leg. (NHMJ) • Swamp, St. Thomas; 04 Feb. 1955; 1 ♂; T. H. Farr leg. (NHMJ) • Chovey House, St. Mary; 12 Sept. 1954; 1 ♂; T. H. Farr leg. (NHMJ) • Discovery Bay, St. Ann; 11 Nov. 2012; 1 ♂; Wisdom leg. (DLSUWI) • Woodford, St. Andrew; 08 Nov. 2013; 1 ♂; T. Barrett leg. (DLSUWI) • Windsor, Trelawny; 31 Oct. 2015; 2 ♂; E. Reid leg. (DLSUWI).

Remarks. Ubiquitous species with a preference for human settlements (Yepes-Gaurisas et al. 2013). Reports of coprophagous (Flores and Dale 1995) and necrophagous (Yepes-Gaurisas et al. 2013) habits.

23. *Oxysarcodexia chaetopygialis* (Williston, 1896)

Literature records. Dodge (1965b); Lopes (1969); Pape (1996); Souza et al. (2020).

Neotropical distribution. Jamaica, St. Vincent.

24. *Oxysarcodexia corolla* Dodge, 1965

Literature records. Dodge (1965b); Lopes (1969); Pape (1996); Souza et al. (2020).

Neotropical distribution. Jamaica.

Newly collected material. • Hardware Gap, Portland; 29 May 2018; 5 ♂; L. Foote and E. Buenaventura leg. (DLSUWI) • Bowden Pen, St Thomas; 05 Jun. 2018; 2 ♂; L. Foote and E. Buenaventura leg. (DLSUWI) • Red Light, St. Andrew; 26 Feb. 2024; 1 ♂; L. Foote leg. (DLSUWI).

Remarks. Little is known about the species except its morphology described by Dodge (1965b). Specimens were collected in a VSR trap baited with decomposing chicken in this study.

25. *Oxysarcodexia dorisae* Dodge, 1965

Literature records. Dodge (1965b); Lopes (1969); Pape (1996); Souza et al. (2020).

Neotropical distribution. Jamaica.

26. *Oxysarcodexia peltata* (Aldrich, 1916)

Literature records. Johnson (1919); Dodge (1965b); Lopes (1946, 1969); Pape (1996); Souza et al. (2020).

Neotropical distribution. Bahamas, Cuba, Dominica, Guadeloupe, Jamaica, Mexico, Panama, Puerto Rico, San Andres Islands, St. Lucia, St. Vincent.

Newly collected material. • Green Grotto, St. Ann; 31 May 2018; 11 ♂; L. Foote and E. Buenaventura leg. (DLSUWI) • Belair, St. Ann; 31 May 2018; 7 ♂; L. Foote and E. Buenaventura leg. (DLSUWI) • Windsor, Trelawny; 01 Jun. 2018; 5 ♂; L. Foote and E. Buenaventura leg. (DLSUWI) • Bowden Pen, St. Thomas; 05 Jun. 2018; 2 ♂; L. Foote and E. Buenaventura leg. (DLSUWI) • Hardware Gap, Portland; 29 May 2018; 3 ♂; L. Foote and E. Buenaventura leg. (DLSUWI) • Merrywood, St. Elizabeth; 24 May 2021; 2 ♂; R. Daley leg. (DLSUWI) • Newport, Manchester; 18 Aug. 2023; 2 ♂; R. Daley leg. (DLSUWI) • Red Light, St. Andrew; 20 Feb. 2024; 1 ♂; L. Foote leg. (DLSUWI) • Comfort Castle, Portland; 27 Mar. 2024; 10 ♂; L. Foote leg. (DLSUWI).

Museum material. • 4 miles South of Buff Bay, Portland; 14 Mar. 1947; 1 ♂; G. B. Thompson leg. (NHMJ) • Quickstep, Trelawny; 10 Mar. 1949; 1 ♀; C. B. Lewis leg. (NHMJ) • Hermitage Dam, St. Andrew; 21 Jan. 1947; 1 ♂; C. B. Lewis leg. (NHMJ) • Negril, Westmoreland; 19 Jul. 1954; 1 ♀; T. H. Farr leg. (NHMJ) • Whitfield Hall, St. Thomas; Dec. 1954; 1 ♀; G.R. Proctor leg. (NHMJ) • Ferry, St. Andrew; 03 Oct. 1954; 2 ♂; T. H. Farr leg. (NHMJ) • Beverly Hills, St. Andrew; 26 Dec. 1954; 1 ♀; (NHMJ) • Long Mountain, St. Andrew; 19 Sep. 1954; 2 ♀, 1 ♂; T. H. Farr leg. (NHMJ) • Rock Hall, St. Andrew; 17 Oct. 1984; 1 ♂; P. Coward leg. (DLSUWI) • Hope Gardens, St. Andrew; 09 Nov. 2003; 2 ♂; V. Thompson leg. (DLSUWI) • Spanish Town, St. Catherine; 02 Nov. 2011; 1 ♂; K. Reid leg. (DLSUWI) • Mona, St. Andrew; 10 Apr. 2014; 2 ♂; S. Matthew leg. (DLSUWI) • Discovery Bay, St. Ann; 14 Sep. 2014; 2 ♂; J. Dixon leg. (DLSUWI) • Roaring River, St. Ann; 03 Oct. 2014; 1 ♂; S. McKenzie leg. (DLSUWI).

Remarks. Known for its role as a pollinator of the White Mangrove, *Laguncularia racemosa* (Sánchez-Núñez and Mancera-Pineda 2012). It was collected from decomposing chicken during the present study. *Oxysarcodexia peltata* was the second most frequently collected species during the sampling period, with a presence confirmed across ten localities.

Genus *Peckia* Robineau-Desvoidy, 1830

27. *Peckia* (*Euboettcheria*) *buethni* Dodge, 1965

Fig. 4

Literature records. Dodge (1965b); Lopes (1969); Pape (1996); Buenaventura and Pape (2013).

Neotropical distribution. Jamaica.

Newly collected material. Rio Bueno Property, St. Ann; 31 May 2018; 1 ♂; L. Foote and E. Buenaventura leg. (DLSUWI).

Remarks. This species is only known from Jamaica. Dodge (1965b) first described it from Papine, Kingston, approximately 114 km from its collection locality in this study. Its biology is unknown. However, specimens were collected in a VSR trap baited with decomposing chicken in the present study.



Figure 4. *Peckia* (*Euboettcheria*) *buethni*. Male terminalia, lateral view; endemic to Jamaica. Scale bar: 1 mm.

28. *Peckia* (*Peckia*) *chrysostoma* (Wiedemann, 1830)

Literature records. Lopes (1941; Dodge (1965b); Lopes (1969); Pape (1996); Buenaventura and Pape (2013); Mello-Patiu (2016); Dufek (2019); Dufek et al. (2020); Toma et al. (2020).

Neotropical distribution. American Virgin Is, Argentina, Bahamas, Belize, Bolivia, Brazil, Chile, Colombia, Costa Rica, Dominica, Ecuador, French Guiana, Galápagos Is, Guatemala, French Guiana, Guyana, Jamaica, Mexico, Nicaragua, Panama, Peru, Surinam, Trinidad & Tobago, Venezuela.

Newly collected material. • Rio Bueno Property, St. Ann; 31 May 2018; 1 ♂; L. Foote and E. Buenaventura leg. (DLSUWI) • Belair, St. Ann; 31 May 2018; 2 ♂; L. Foote and E. Buenaventura leg. (DLSUWI) • Green Grotto, St. Ann; 31 May 2018; 3 ♂; L. Foote and E. Buenaventura leg. (DLSUWI) • Windsor, Trelawny; 01 Jun. 2018; 2 ♂; L. Foote and E. Buenaventura leg. (DLSUWI) • Bowden Pen, St. Thomas; 05 Jun. 2018; 5 ♂; L. Foote and E. Buenaventura leg. (DLSUWI) • Mona, St. Andrew; 17 Jun. 2018; 10 ♂; L. Foote leg. (DLSUWI) • Newport, Manchester; 18 Aug. 2023; 4 ♂; R. Daley leg. (DLSUWI) • Comfort Castle, Portland; 27 Mar. 2024; 2 ♂; L. Foote leg. (DLSUWI).

Museum material. • Copa Cabana, St. Thomas ; 24 Jan. 1989; 1 ♂; N. Knight leg. (DLSUWI) • Gordon Town, St. Andrew; 15 Jan. 2009; 1 ♂; J. Wynter leg. (DLSUWI) • May Pen, Clarendon; 21 Nov. 2010; 1 ♂; T. Gooden leg. (DLSUWI) • Guys Hill, St. Catherine; 23 Nov. 2011; 2 ♂; D. Allen leg. (DLSUWI) • Green Grotto, St. Ann; 13 Nov. 2010; 1 ♂; D. Herro leg. (DLSUWI) • Discovery Bay, St. Ann; 14 Sept. 2014; 1 ♂; J. Dixon leg. (DLSUWI) • Windsor, Trelawny; 04 Oct. 2014; 1 ♂; Hanchard leg. (DLSUWI) • Mona, St. Andrew; 23 Sept. 2014; 3 ♂; R. Daley leg. (DLSUWI) • Roaring River, St. Ann; 05 Nov. 2016; 1 ♂; S. McKenzie leg. (DLSUWI).

Remarks. *Peckia* (*Peckia*) *chrysostoma* is one of the most widely distributed species in the genus *Peckia* (Buenaventura and Pape 2013). It has been reported as a coloniser of human corpses in Brazil (Vasconcelos et al. 2014), and Dodge (1965b) mentions specimens from Jamaica that were “bred from crocodile”. Specimens have been recorded as collected from stinkhorn fungus (*Phallus* sp.; Phallales: Basidiomycota) and flowers of *Casearia* sp. (Salicaceae) (Camargo et al. 2018).

29. *Peckia* (*Sarcodexia*) *dominicana* (Lopes, 1982)

Fig. 5

Neotropical distribution. Dominican Republic, Jamaica (new record).

Newly collected material. • Windsor, Trelawny; 01 Jun. 2018; 1 ♂; L. Foote and E. Buenaventura leg. (DLSUWI) • Hardware Gap, Portland; 29 May 2018; 2 ♂; L. Foote and E. Buenaventura leg. (DLSUWI) • Red Light, St. Andrew; 20 Mar. 2024; 1 ♂; L. Foote leg. (DLSUWI).

Remarks. Previously known only from the Dominican Republic. This study reports *Peckia* (*Sarcodexia*) *dominicana* as a new record for Jamaica and adds to its distribution within the Caribbean. Little is known about the biology of *P. dominicana*. It was collected in a VSR trap baited with decomposing chicken in the present study.



Figure 5. *Peckia (Sarcodexia) dominicana*. Male terminalia, postero-lateral view; Antillean species, new record from Jamaica. Scale bar: 1 mm.

30. *Peckia (Peckia) hillifera* (Aldrich, 1916)

Literature records. Buenaventura and Pape (2013); (Camargo et al. 2018).

Neotropical distribution. Bahamas, Brazil, Cuba, Jamaica, México, Panamá, Puerto Rico, Trinidad & Tobago, Venezuela.

Newly collected material. • Belair, St. Ann; 31 May 2018; 1 ♂; L. Foote and E. Buenaventura leg. (DLSUWI).

Remarks. Specimens have been reared from a dead crab [*Ucides cordata* (Linnaeus)] (Camargo et al. 2018).

31. *Peckia (Sarcodexia) lambens* (Wiedemann, 1830)

Literature records. Townsend (1892, 1993, both as *Sarcodexia sternodontis*); Johnson (1908, 1919, both as *Sarcophaga sternodontis*); Lopes (1969, as *Sarcodexia sternodontes*); Pape (1996); Buenaventura and Pape (2013); Vairo et. al (2011); Vairo et al. (2014); Mello-Patiu (2016); Dufek (2019); Dufek et al. (2020); Ramírez-Mora et al. (2022).

Neotropical distribution. Argentina, Bahamas, Bolivia, Brazil, Cayman Is, Chile, Colombia, Costa Rica, Cuba, Ecuador, El Salvador, Galápagos Is, Guadeloupe, Guyana, Haití, Honduras, Jamaica, México, Panamá, Paraguay, Perú, Puerto Rico, St. Vincent and the Grenadines, Trinidad & Tobago, Venezuela.

Newly collected material. • Green Grotto, St. Ann; 31 May 2018; 3 ♂; L. Foote and E. Buenaventura leg. (DLSUWI) • Belair, St. Ann; 31 May 2018; 2 ♂; L. Foote and E. Buenaventura leg. (DLSUWI) • Red Light, St. Andrew; 26 Feb. 2024; 3 ♂; L. Foote leg. (DLSUWI) • Newport, Manchester; 18 Aug. 2023; 2 ♂; R. Daley leg. (DLSUWI) • Comfort Castle, Portland; 27 Mar. 2024; 2 ♂; L. Foote leg. (DLSUWI).

Museum material. • Cambridge District, St. Elizabeth; 23 Nov. 2013; 1 ♂; Bailey leg. (DLSUWI) • August Town, St. Andrew; 09 Nov. 2017; 1 ♂; Dacosta leg. (DLSUWI).

Remarks. Known as a saprophagous and necrophagous species in the Neotropics (Lopes de Carvalho and Linhares 2001; Vairo et al. 2015). It has been reported on human corpses and is considered one of the most important saprophagous species of forensic importance (Vairo et al. 2015). It has been collected from decomposing fish, bovine spleen and faeces (Barbosa 2019). Known parasitoid of the yellowtail moth (*Hylesia metabus*) and the fall army-worm (*Spodoptera frugiperda*) (Toma et al. 2018).

32. *Peckia* (*Euboettcheria*) *nicasia* (Lopes, 1941)

Literature records. Dodge (1965b); Lopes (1941, 1969); Pape (1996); Buenaventura and Pape (2013).

Neotropical distribution. Jamaica.

Newly collected material. • Windsor, Trelawny; 01 Jun. 2018; 3 ♂; L. Foote and E. Buenaventura leg. (DLSUWI) • Green Grotto, St. Ann; 31 May 2018; 1 ♂; L. Foote and E. Buenaventura leg. (DLSUWI) • Hardware Gap, Portland; 29 May 2018; 2 ♂; L. Foote and E. Buenaventura leg. (DLSUWI) • Bowden Pen, St. Thomas; 05 Jun. 2018; 1 ♂; L. Foote and E. Buenaventura leg. (DLSUWI) • Mona, St. Andrew; 12 Jun. 2018; 2 ♂; L. Foote leg. (DLSUWI) • Red Light, St. Andrew; 20 Mar. 2024; 5 ♂; L. Foote leg. (DLSUWI).

Museum material. • Cinchona Morce's Gap, St. Andrew; 21 Aug. 1949; 1 ♀; R. B. Bengry & R. Hart leg. (NHMJ) • Hermitage Reservoir, St. Andrew; 30 May 1954; 1 ♂; T. H. Farr leg. (NHMJ) • Southwest of Ecclesdown, Portland; 24 Aug. 1954; 1 ♂; T. H. Farr leg. (NHMJ) • Fern Gully, St. Ann; 11 Jul. 1954; 1 ♂; T. H. Farr leg. (NHMJ) • Hermitage Dam, St. Andrew; 31 May 1954; 1 ♂; R. B. Bengry leg. (NHMJ) • Long Mountain, St. Andrew; 26 Jun. 1955; 1 ♂; T. H. Farr leg. (NHMJ) • Benson Avenue; 12 Sep. 2007; 1 ♂; A. Sherman leg. (DLSUWI) • Bowden Pen, St. Thomas; 04 Nov. 2011; 1 ♂; T. Stephenson; (DLSUWI) • Roaring River, St. Ann; 03 Oct. 2014; 2 ♂; Bennett leg. (DLSUWI) • Dolphin Head Mountain, Hanover; 01 Oct. 2014; 1 ♀; L. Wright leg. (NHMJ).

Remarks. The species was collected in a VSR trap baited with decomposing chicken during the present study. It has previously been collected from decomposing pig carrion (Foote 2014).

Genus *Ravinia* Robineau-Desvoidy, 1863

33. *Ravinia effrenata* (Walker, 1861)

Literature records. Johnson (1919; as *Sarcophaga* (*Ravinia*) *quadrisetosa*, see Dodge 1965b); Hall (1928, as *Sarcophaga adamsii*); Lopes (1969, as *Chaetoravinia adamsi*); Pape (1996); Mello-Patiu (2016); Ramírez-Mora et al. (2022).

Neotropical distribution. Bahamas, Brazil, Colombia, Costa Rica, Cuba, Dominica, Dominican Republic, El Salvador, Guatemala, Jamaica, México, Panamá, Perú, St. Vincent.

Newly collected material. • Rio Bueno Property, St. Ann; 31 May 2018; 6 ♂; L. Foote and E. Buenaventura leg. (DLSUWI) • Belair, St. Ann; 31 May 2018; 2 ♂; L. Foote and E. Buenaventura leg. (DLSUWI) • Newport, Manchester; 18 Aug. 2023; 2 ♂; R. Daley leg. (DLSUWI).

Museum material. • Amity Hall, St. Catherine; 23 Mar. 1947; 1 ♂; C. B. Thompson leg. (NHMJ) • West of Jacob's Hut, Clarendon; 28 Sept. 1954; 1 ♂; T. H. Farr leg. (NHMJ).

Remarks. Species collected from decomposing fish (sardines), human faeces (Barbosa 2019) and fruit (Valverde-Castro et al. 2017).

Genus *Sarcodexiopsis* Townsend, 1917

34. *Sarcodexiopsis welchi* (Hall, 1930)

Fig. 6

Literature records. Pape (1996).

Neotropical distribution. Bahamas, British Virgin Is, Cuba, Jamaica, Puerto Rico.

Newly collected material. • Belair, St. Ann; 31 May 2018; 1 ♂; L. Foote and E. Buenaventura leg. (DLSUWI).



Figure 6. *Sarcodexiopsis welchi*. Male terminalia, lateral view; Antillean species. Scale bar: 1 mm.

Genus *Sarcofahrtiopsis* Hall, 1933

35. *Sarcofahrtiopsis diembroma* Dodge, 1965

Literature records. Dodge (1965b); Lopes (1969); Pape (1996).

Neotropical distribution. Jamaica.

Remarks. This species is still known only from the original type series consisting of two females. The holotype from Second Breakfast Spring, St. Andrew (deposited in Washington State University), and a female paratype from Hermitage, St. Andrew, stated to be in the “Science Museum, Institute of Jamaica” (now Natural History Museum of Jamaica) but were not located.

36. *Sarcofahrtiopsis farri* Dodge, 1965

Literature records. Dodge (1965b); Lopes (1969); Pape (1996); Pape and Méndez (2004).

Neotropical distribution. Costa Rica, Jamaica.

Newly collected material. • Green Grotto, St. Ann; 31 May 2018; 3 ♂; L. Foote and E. Buenaventura leg. (DLSUWI) • Belair, St. Ann; 31 May 2018; 3 ♂; L. Foote and E. Buenaventura leg. (DLSUWI) • Rio Bueno Property, St. Ann; 31 May 2018; 2 ♂; L. Foote and E. Buenaventura leg. (DLSUWI).

Museum material. • Ferry, St. Andrew; 03 Oct. 1954; 1 ♂; T. H. Farr leg. (NHMJ) • Rio Cobre, St. Catherine; 05 Jun. 1952; 1 ♂; R. P. Bengry leg. (NHMJ) • Colonel Ridge, Clarendon; 18 Nov. 1946; 1 ♂; G. B. Thompson leg. (NHMJ).

37. *Sarcofahrtiopsis jamaicensis* Dodge, 1965

Literature records. Dodge (1965b); Lopes (1969); Pape (1996).

Neotropical distribution. Jamaica.

Museum material. • Hermitage Dam, St. Andrew; 03 May 1954; 1 ♂; R. P. Bengry leg. (NHMJ).

38. *Sarcofahrtiopsis paterna* Dodge, 1965

Literature records. Dodge (1965b); Pape and Méndez (2004).

Neotropical distribution. Cuba, Jamaica, Puerto Rico.

Remarks. The presence of this species in Jamaica is based on one male paratype with no further data (Dodge 1965b).

Genus *Sarcophaga* Meigen, 1826

39. *Sarcophaga (Liopygia) ruficornis* (Fabricius, 1794)

Literature records. Pape (2024).

Neotropical distribution. Brazil, Colombia, Jamaica, Panamá, Venezuela.

Newly collected material. • Mona, St. Andrew; 07 Sep. 2018; 1 ♂; L. Foote leg. (DLSUWI).

Remarks. This is the first record from Jamaica documented with explicit reference to a collected specimen. Considered to be synanthropic and of forensic relevance (Barbosa 2019). Larvae were found to cause myiasis in toads (*Bufo melanostictus* Schneider) (Roy and Dasgupta 1977). It has been collected from decomposing bovine spleen and fish (Barbosa 2019) as well as from human cadavers (Kavitha et al. 2013). The optimum temperature for the development of *S. ruficornis* larvae is 20–35 °C (Nassu et al. 2014).

Genus *Tapacura* Tibana & Lopes, 1985

40. *Tapacura mariarum* Tibana & Lopes, 1985

Fig. 7

Neotropical distribution. Brazil, Jamaica (new record).

Newly collected material. Green Grotto, St. Ann; 31 May 2018; 4 ♂; L. Foote and E. Buenaventura leg. (DLSUWI).

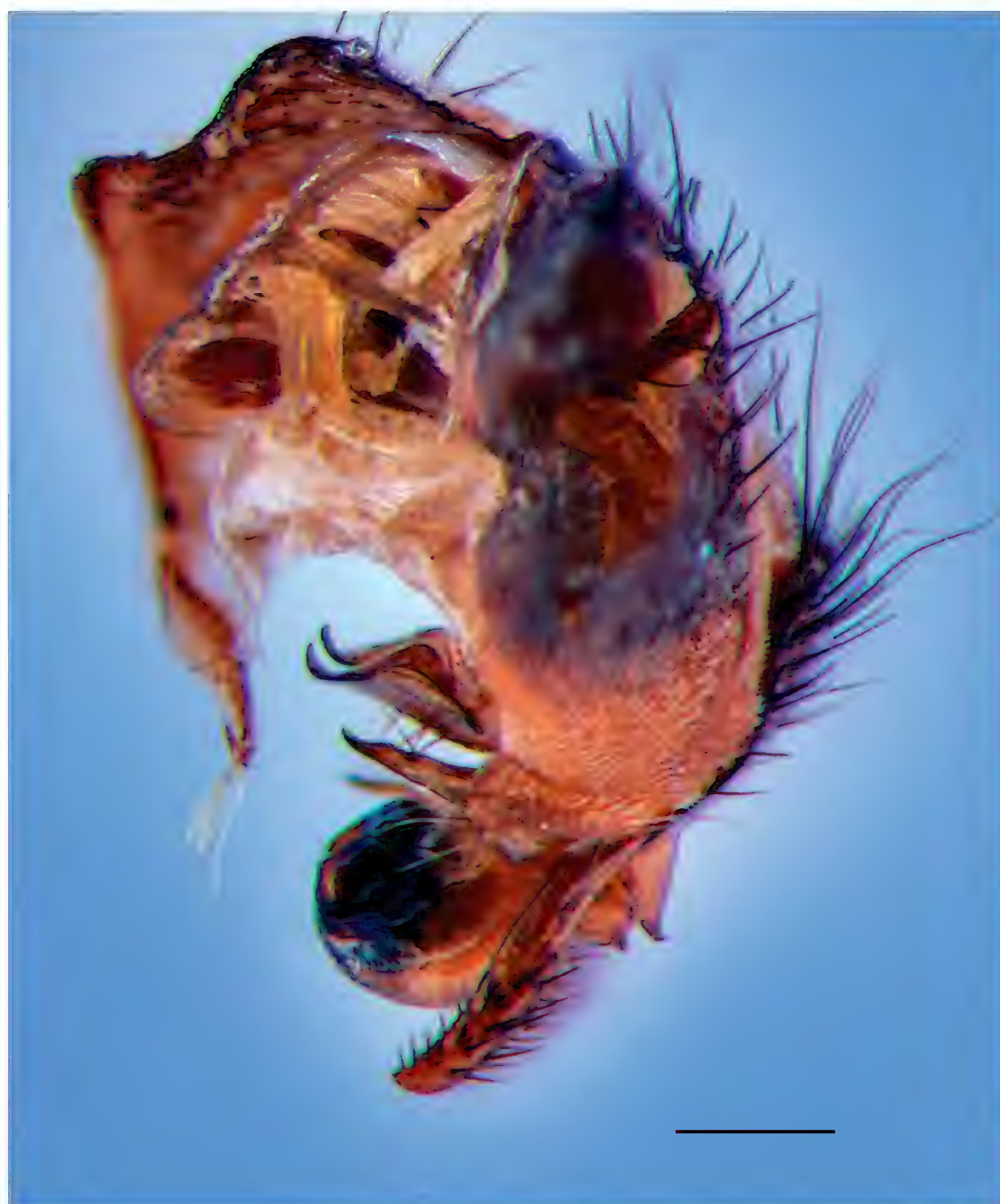


Figure 7. *Tapacura mariarum*. Male terminalia, lateral view; new record from Jamaica. Scale bar: 1 mm.

Remarks. New record of this genus and species from Jamaica. The genus *Tapacura* presently contains two species, *Tapacura mariarum* recorded in the Neotropics (Brazil) and *Tapacura mexicana* Lopes, 1988 known only from the Nearctic (México) (Mello-Patiu and de Souza Neto 2007). There is no information on the biology of the species. It was collected from a VSR trap baited with decomposing chicken in the present study.

Genus *Titanogrypa* Townsend, 1860

41. *Titanogrypa* (*Airypel*) *cryptopyga* Lopes, 1956

Literature records. Dodge (1965b, as *Airypel molluscooperda*); Lopes (1969); Pape (1996); Dufek (2019); Dufek et al. (2020).

Neotropical distribution. Argentina, Bolivia, Brazil, Cuba, Guyana, Jamaica, Trinidad & Tobago.

Museum material. • Ferry, St. Andrew; 03 Oct. 1954; 1 ♂; T. H. Farr leg. (NHMJ).

Remarks. Probably a scavenger. Dodge (1965b) gave label data from the holotype and a paratype: “Emerged Nov. 8, 1902, in Pittsburgh, Pa. Pupae received with shells received from near Mandeville, Jamaica”.

42. *Titanogrypa* (*Sarconeiva*) *fimbriata* (Aldrich, 1916)

Literature records. Johnson (1919); Dodge (1965b); Lopes (1969); Pape (1996); Vairo et. al (2011); Dufek (2019); Dufek et al. (2020).

Neotropical distribution. Argentina, Brazil, Dominica, Dominican Republic, Jamaica, México, Panamá, Perú, Venezuela.

Newly collected material. • Bowden Pen, St. Thomas; 05 Jun. 2018; 4 ♂; L. Foote and E. Buenaventura leg. (DLSUWI).

Museum material. • Mona, St. Andrew; 07 May 1989; 1 ♂; J. Lawrence leg. (DLSUWI) • Mona, St. Andrew; 17 Nov. 2009; 1 ♂; T. Henry leg. (DLSUWI).

Remarks. Considered to be of forensic relevance (Barbosa 2019). It has been recorded from decomposition studies in Brazil (Mello-Patiu et al. 2014), on gastropods/molluscs (Barker 2004), and decomposing sardines (Barbosa 2019).

Genus *Tricharaea* (*Sarcophagula*) Wulp, 1887

43. *Tricharaea canuta* (Wulp, 1896)

Literature records. Dodge (1965b); Lopes (1969); Pape (1996); Mello-Patiu (2016); Ramírez-Mora et al. (2022).

Neotropical distribution. Brazil, Colombia, Costa Rica, Cuba, Dominica, Ecuador, El Salvador, Galápagos Is, Guatemala, Honduras, Jamaica, México, Paraguay, Perú.

Newly collected material. • Mona, St. Andrew; 07 Sep. 2018; 1 ♂; L. Foote leg. (DLSUWI).

Remarks. Synanthropic species of forensic relevance (Barbosa 2019). It has been collected from human faeces and decomposing bovine spleen (Barbosa 2019).

44. *Tricharaea (Sarothromyia) femoralis* (Schiner, 1868)

Literature records. Johnson (1908, 1919).

Neotropical distribution. Bahamas, Brazil, Costa Rica, Cuba, Dominica, French Guiana, Honduras, Panama, Puerto Rico, Surinam, Trinidad & Tobago, Turks & Caicos Is., Venezuela.

Museum material. • Holland Bay, St. Thomas; 16 Mar. 1989; 8 ♀; T. H. Farr leg. (NHMJ) • Holland Bay, St. Thomas; 16 Nov. 1988; 5 ♀; R. A. Boothe leg. (NHMJ).

45. *Tricharaea (Sarcophagula) occidua* (Fabricius, 1794)

Literature records. Johnson (1908, as *Sarcophagula imbecilla*; 1919); Dodge (1965b); Dufek et al. (2020).

Neotropical distribution. American Virgin Is., Argentina, Bolivia, Brazil, Chile, Colombia, Cuba, Dominica, Ecuador, El Salvador, Galápagos Is, Guatemala, Guyana, Haiti, Honduras, Jamaica, Mexico, Panama, Paraguay, Peru, Puerto Rico, St. Vincent Is., Venezuela.

Museum material. • Swamp, St. Thomas; 03 Nov. 1955; 1 ♀; T. H. Farr leg. (NHMJ) • Half Way Tree, St. Andrew; 06 Aug. 1950; 2 ♀; R. B. Bengry leg. (NHMJ) • Windsor Hotel, St. Ann; 20 Sep. 1959; 1 ♀; T. H. Farr leg. (NHMJ) • Ferry, St. Andrew; 03 Oct. 1954; 1 ♀; T. H. Farr leg. (NHMJ).

Remarks. Only females were studied in the present study, and their separation from *T. canuta* (Wulp, 1896) remains tentative.

Discussion

The updated checklist for Jamaica includes 45 species, four of which are new records. The number of genera in Jamaica has increased to 21 with the addition of the genera *Bahamiola* and *Tapacura*.

With the addition of *Peckia* (*Sarcodexia*) *dominicana* to the checklist, *Peckia* becomes the most speciose flesh fly genus in Jamaica with a total of six species: *P. buethni*, *P. chrysostoma*, *P. dominicana*, *P. hillifera*, *P. lambens*, and *P. nicasia*. Some species of *Peckia* were quite rare. Only one individual of *P. buethni* was collected in this study. Previous record of *P. buethni* was one male in Papine, St. Andrew (southern Jamaica), collected by W. Büthn (BMNH). Similarly, only one individual of *P. hillifera* was collected in this study. Previous record of *P. hillifera* was one male in Milk River bath, St. Thomas (southern Jamaica), collected by Wirth and Farr (ZMUC). This pattern suggests that *P. buethni* and *P. hillifera* are rare in Jamaica, despite their relatively wide distribution.

Lepidodexia subgenus *Harpagopyga* Aldrich contains 15 nominal species, 14 of which occur in the Neotropical region (Pape 1996). Dodge (1965b) documented five species of *Lepidodexia* from Jamaica, all of which are endemic to the island. An additional species, *L. diversipes*, is here added to the records of *Lepidodexia* from Jamaica, increasing the total species number to six. Of note, no specimens collected during the present study, suggesting low abundance, a very narrow distribution, or sparse collecting for flesh flies in Jamaica.

Oxysarcodexia consists of 91 described species worldwide and is considered one of the most species-rich genera in the Neotropics (Souza et al. 2020).

Jamaica has five species of *Oxysarcodexia*, making it one of the most speciose genera on the island after *Peckia* and *Lepidodexia*. There are two endemic species of *Oxysarcodexia* recorded for Jamaica: *O. corolla* and *O. dorisae*. Only the female of *O. dorisae* is known, while both the male and the female of *O. corolla* are known. *Oxysarcodexia corolla* was found in a wet limestone forest, wet forest, and a rural area in St. Andrew, which might indicate a preference for environments with low anthropogenic impact. All other known species of *Oxysarcodexia* in Jamaica are widely distributed.

Bahamiola orbitalis was previously known only from the Bahamas (Grand Bahama Is.; Dodge 1965a). With 94 individuals across five locations, the species is common and widely distributed (Table 4).

Tapacura mariarum was previously known only from Brazil (Tibana and Lopes 1985), and the present record represents a significant range extension. Four individuals were collected at the Green Grotto, St. Ann. This species is likely to have a restricted geographical range in Jamaica, and its occurrence at a single locality may suggest a limited distribution in the island.

MacArthur and Wilson (1967) demonstrated that the number of species on an island is correlated with its size and proximity to the mainland. The Caribbean islands share several species due to their proximity and shared geological histories. According to Crews and Esposito (2020) islands are sources of diversity with dispersal from a large island source to smaller islands. Notably, Cuba, the largest island of the Greater Antilles (Fig. 8, Table 4), has the largest number of known species of Sarcophagidae. There are 15 species shared between Jamaica and Cuba, which may be attributed mainly to their close proximity, as Jamaica is approximately 145 km from the southeastern coast of Cuba. Winds may further facilitate species dispersal between these islands (Kirk-Spriggs and Muller 2017).

Table 4. Total number of endemics and percentage endemism of Sarcophagidae known from islands of the Greater Antilles.

Island	Number of endemics	Percentage of endemics (%)	Number of species	Size of island (km ²)
Jamaica	15	33	45	10,992
Cuba	14	25	55	109,884
Hispaniola	3	14	19	76,192
Puerto Rico	4	13	30	8,870

Hispaniola is situated 190 km east of Jamaica. A total of 19 species of Sarcophagidae have been identified on the island, and of these, eight species are shared with Jamaica. It is noteworthy that Hispaniola is approximately seven times larger than Jamaica (Table 4), suggesting that Hispaniola may be under-sampled or inadequately studied. Another factor suggesting low sampling efforts on the island of Hispaniola is the low number of species shared between the two countries of the island. Eight species are recorded from the Haitian part and 13 from the Dominican Republic. Only two species are found in both countries, indicating inadequate sampling.

Puerto Rico, the smallest island in the Greater Antilles (Table 4), is the furthest from Jamaica, located at a distance of 923 km. Despite this distance, Puerto Rico and Jamaica share 12 species, which may reflect extensive sampling efforts in Puerto Rico.

Several species previously thought to be endemic to other islands have been found in Jamaica. It is unclear whether these species were recently introduced to Jamaica or if their endemism to other islands was mistakenly identified. A genetic analysis of these populations is needed to resolve these uncertainties.

Compared to other islands in the Greater Antilles, Jamaica is notable for its high endemism of Sarcophagidae. With an area of 10,992 km², Jamaica is the third largest island in the Greater Antilles (Fig. 8). The island's diverse geography, which includes complex topography such as extensive karst limestone regions, mountains and plains, along with a range of biomes from xerophytic conditions receiving less than 60 cm of annual precipitation to wet forests receiving more than 700 cm, has fostered numerous centres of speciation (Aitken-Soux et al. 1981), contributing to its high endemism. Specific regions, such as the Cockpit Country, are known to be local centres of endemism due to their distinctive geomorphology, characterized by isolated conical hills and depressions (Sweeting 1958), which limit species dispersal and create distinct microhabitats.

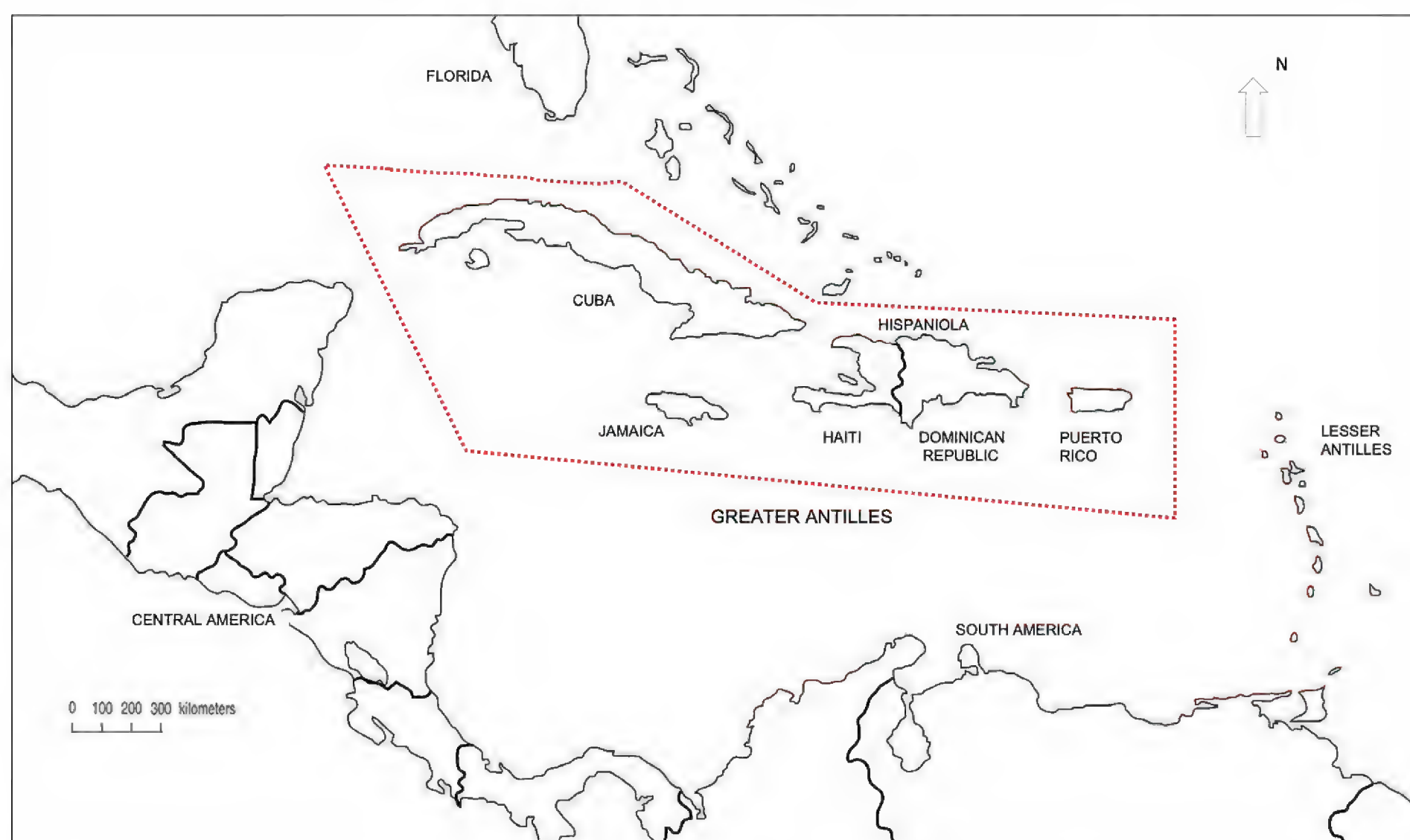


Figure 8. Map of the Caribbean region, highlighting the Greater Antilles.

Acknowledgements

Latoya Foote-Gordon acknowledges the support of the National History Museum of Jamaica, Smithsonian National Museum of Natural History, USA, and the Natural History Museum of Denmark, University of Copenhagen, Denmark, for this project. We are grateful to Taneisha Barrett at the University of Hong Kong for the photographs. The authors would like to thank the reviewers for their insightful comments and suggestions, which greatly improved the quality of this manuscript. We also express our sincere gratitude to the editors for their guidance and support throughout the review process.

Additional information

Conflict of interest

The authors have declared that no competing interests exist.

Ethical statement

No ethical statement was reported.

Funding

National History Museum of Jamaica, Smithsonian National Museum of Natural History, USA, and the Natural History Museum of Denmark, University of Copenhagen, Denmark.

Author contributions

Conceptualization: LFG. Data curation: LFG, EB. Formal analysis: LFG. Funding acquisition: LFG. Investigation: EB, LFG. Methodology: LFG. Resources: EG, LFG. Supervision: EG, TP. Validation: EB, TP. Writing - original draft: LFG. Writing - review and editing: LFG, EB, TP, EG.

Author ORCIDs

Latoya Foote-Gordon  <https://orcid.org/0009-0001-6713-0550>

Eric Garraway  <https://orcid.org/0009-0004-5586-1649>

Thomas Pape  <https://orcid.org/0000-0001-6609-0609>

Eliana Buenaventura  <https://orcid.org/0000-0002-5265-815X>

Data availability

All of the data that support the findings of this study are available in the main text.

References

- Aitken-Soux P, Wahab AH, Johnson IE (1981) Country-level action plan- Jamaica. IICA Biblioteca, Venezuela, 18 pp.
- Bänziger H, Pape T (2004) Flowers, faeces and cadavers: natural feeding and laying habits of flesh flies in Thailand (Diptera: Sarcophagidae, *Sarcophaga* spp.). *Journal of Natural History* 38(13): 1677–1694. <https://doi.org/10.1080/0022293031000156303>
- Barbosa TM (2019) Sarcophagidae (Diptera) no bioma caatinga: revisão taxonômica do subgênero *Titanogrypa* (*Cucullomyia*) e avaliação do potencial de espécies como bioindicadoras de conservação ambiental. PhD Thesis, Universidade Federal de Pernambuco, Recife, Brazil. <https://repositorio.ufpe.br/handle/123456789/34067>
- Barker GM (2004) Natural enemies of terrestrial molluscs. CABI Publishing, Wallingford, Oxfordshire, 644 pp. <https://doi.org/10.1079/9780851993195.0085>
- Barros RM, Mello-Patiu CA, Pujol-Luz JR (2008) Sarcophagidae (Insecta, Diptera) associated to the decay process of *Sus scrofa* Linnaeus (Suidae) carcasses in a cerrado area of distrito federal, Brazil. *Revista Brasileira de Entomologia* 52(4): 606–609. <https://doi.org/10.1590/S0085-56262008000400011>
- Beltran Y, Pinilla T, Segura NA, Bello FJ (2012) Synanthropy of Calliphoridae and Sarcophagidae (Diptera) in Bogotá, Colombia. *Neotropical Entomology* 41(3): 237–242. <https://doi.org/10.1007/s13744-012-0036-x>
- Buenaventura E (2021) Museomics and phylogenomics with protein-encoding ultra-conserved elements illuminate the evolution of life history and phallic morphology

- of flesh flies (Diptera: Sarcophagidae). BMC Ecology and Evolution 21(70): 1–18. <https://doi.org/10.1186/s12862-021-01797-7>
- Buenaventura E, Pape T (2013) Revision of the new world genus *Peckia* Robineau-Desvoidy (Diptera: Sarcophagidae). Zootaxa 3622(1): 1–87. <https://doi.org/10.11646/zootaxa.3622.1.1>
- Buenaventura E, Valverde-Castro C, Wolff M (2021a) New carrion-visiting flesh flies (Diptera: Sarcophagidae) from tropical dry forests of Colombia and their phylogenetic affinities. Acta Tropica 213: 105720. <https://doi.org/10.1016/j.actatropica.2020.105720>
- Buenaventura E, Lloyd MW, Perilla-López JM, González VL, Thomas-Cabianca A, Dikow T (2021b) Protein-encoding ultraconserved elements provide a new phylogenomic perspective of Oestroidea flies (Diptera: Calyptratae). Systematic Entomology 46: 5–27. <https://doi.org/10.1111/syen.12443>
- Camargo SLX, Carvalho-Filho FS, Esposito CM (2018) The genus *Peckia* Robineau-Desvoidy (Diptera: Sarcophagidae) in the Brazilian Amazon: a new species, new records, descriptions of female terminalia and key to species. Zootaxa 4483(1): 1–35. <https://doi.org/10.11646/zootaxa.4483.1.1>
- Carvalho LML, Linhares AX (2001) Seasonality of insect succession and pig carcass decomposition in a natural forest area in south-eastern Brazil. Journal of Forensic Science 46(3): 604–608. <https://doi.org/10.1520/JFS15011J>
- Carvalho-Filho FS, Esposito CM (2012) Revision of *Argoravinia* Townsend (Diptera: Sarcophagidae) of Brazil with the description of two new species. Zootaxa 3256: 1–26. <https://doi.org/10.11646/zootaxa.3256.1.1>
- Cherix D, Wyss C, Pape T (2012) Occurrences of flesh flies (Diptera: Sarcophagidae) on human cadavers in Switzerland, and their importance as forensic indicators. Forensic Science International 220(1–3): 158–163. <https://doi.org/10.1016/j.forsci-int.2012.02.016>
- Crews SC, Esposito LA (2020) Towards a synthesis of the Caribbean biogeography of terrestrial arthropods. BMC Ecology Biology 20: 12. <https://doi.org/10.1186/s12862-019-1576-z>
- Curran CH (1928) Insects of Porto Rico and the Virgin Islands. Diptera or two-winged flies. Scientific Survey of Porto Rico and the Virgin Islands 11: 1–118.
- Dahlem G, Downes Jr W (1996) Revision of the genus *Boettcheria* in America North of Mexico (Diptera: Sarcophagidae). Insecta Mundi: A Journal of World Insect Systematics 10(1–4): 77–103. <https://digitalcommons.unl.edu/cgi/viewcontent.cgi?article=1361&context=insectamundi>
- Dodge RH (1965a) The Sarcophagidae (Diptera) of the West Indies. I. The Bahamas Islands. Annals of the Entomological Society of America 58(4): 474–497. <https://doi.org/10.1093/aesa/58.4.474>
- Dodge RH (1965b) The Sarcophagidae (Diptera) of the West Indies II. Jamaica. Annals of the Entomological Society of America 58(4): 497–517. <https://doi.org/10.1093/aesa/58.4.497>
- Dufek MI (2019) Comunidades de Calliphoridae y Sarcophagidae (Diptera: Calyptratae) en áreas naturales y disturbados del Chaco Oriental. PhD Thesis, Universidad Nacional del Nordeste, Argentina, 179 pp.
- Dufek MI, Osharov EB, Mulieri PR (2015) Preliminary survey and inventory of Calliphoridae and Sarcophagidae (Diptera) in the Province of Corrientes, Argentina, with new records of species with forensic importance. Revista de La Sociedad Entomológica Argentina 74(1–2): 37–46. <https://ri.conicet.gov.ar/handle/11336/208116>

- Dufek MI, Mello-Patiu CA, Mulieri PR (2020). Inventory of Sarcophaginae (Diptera: Sarcophagidae) for the Humid Chaco, a poorly surveyed ecoregion of South America. *Journal of Natural History* 54(5–6): 367–403. <https://doi.org/10.1080/00222933.2020.1764646>
- Early M, Goff ML (1986) Arthropod succession patterns in exposed carrion on the island of O’ahu, Hawaiian islands, USA. *Journal of Medical Entomology* 23(5): 520–531. <https://doi.org/10.1093/jmedent/23.5.520>
- Ferrar P (1987) A guide to the breeding habits and immature stages of Diptera Cyclorhapha. *Entomonograph* 8(1–2): 1–907. <https://doi.org/10.1163/9789004533936>
- Flores VI, Dale WE (1995) Un estudio sobre la ecología de las moscas Sarcophagidae en la costa central Peruana. *Revista Peruana de Entomología* 38: 13–17.
- Foote L (2014) An introduction to the study of insects of forensic importance in Jamaica. Master’s Thesis, University of the West Indies, Mona, Jamaica.
- Foote-Gordon L, Garraway E (2023a) Ultrastructure Morphology of the Antennae of *Bahamiola orbitalis* (Diptera: Sarcophagidae). *Caribbean Journal of Science* 53(1): 51–58. <https://doi.org/10.18475/cjos.v53i1.a5>
- Foote-Gordon L, Garraway E (2023b) Ultrastructure morphology of the antennae of three *Peckia* species; *Peckia dominicana*, *P. nicasia*, *P. chrysostoma* (Diptera: Sarcophagidae). *Caribbean Journal of Science* 53(2): 198–209. <https://doi.org/10.18475/cjos.v53i2.a4>
- Foote-Gordon L, Garraway E (2023c) Ultrastructure Morphology of the Antennae of *Oxysarcodexia corolla* and *Oxysarcodexia peltata* (Diptera: Sarcophagidae). *Caribbean Journal of Science* 53(2): 384–390. <https://doi.org/10.18475/cjos.v53i2.a19>
- Freeman BE, Jayasingh DB (1975) Population dynamics of *Pachodynerus nasidens* (Hymenoptera) in Jamaica. *Oikos* 26(1): 86–91. <https://doi.org/10.2307/3543282>
- Freeman BE, Taffe CA (1974) Population dynamics and nesting behaviour of *Eumenes colona* (Hymenoptera) in Jamaica. *Oikos* 25: 388–394. <https://doi.org/10.2307/3543961>
- Giroux M, Wheeler T (2009) Systematics and phylogeny of the subgenus *Sarcophaga* (*Neobellieria*) (Diptera: Sarcophagidae). *Annals of the Entomological Society of America* 102(4): 567–587. <https://doi.org/10.1603/008.102.0401>
- Gowdey CC (1926) *Catalogus Insectorum Jamaicensis*. *Entomological Bulletin* 4: 1–114.
- Grindley-Watson EJ (2004) Faunal succession of necrophilous insects on wildlife carcasses in Louisiana. *Journal of Medical Entomology* 40(3): 338–347. <https://doi.org/10.1603/0022-2585-40.3.338>
- Hall DG (1928) *Sarcophaga pallinervis* and related species in the Americas. *Annals of the Entomological Society of America* 21: 331–352[4 pls]. <https://doi.org/10.1093/aesa/21.2.331>
- Howlett BG, Davidson MM, Pattemore DE, Walker MK, Nelson WR (2016) Seasonality of calliphorid and sarcophagid flies across Canterbury arable farms requiring pollinators. *New Zealand Plant Protection* 69: 290–295. <https://doi.org/10.30843/nzpp.2016.69.5899>
- Hwang C, Turner BD (2005) Spatial and temporal variability of necrophagous Diptera from urban to rural areas. *Medical and Veterinary Entomology* 19(4): 379–391. <https://doi.org/10.1111/j.1365-2915.2005.00583.x>
- Johnson CW (1908) The Diptera of the Bahamas, with notes and description of one new species. *Psyche* 15: 69–80. <https://doi.org/10.1155/1908/81853>
- Johnson CW (1919) A revised list of Diptera of Jamaica. *Bulletin Museum of Natural History* 41: 441–449. <http://hdl.handle.net/2246/1354>

- Kavitha R, Nazni WA, Tan TC, Lee HL, Azirun MS (2013) Review of forensically important entomological specimens collected from human cadavers in Malaysia (2005–2010). *Journal of Forensic and Legal Medicine* 20(5): 480–482. <https://doi.org/10.1016/j.jflm.2013.03.007>
- Kirk-Spriggs AH, Muller BS (2017) Biogeography of Diptera. *Manual of Afrotropical Diptera* 1: 203–238.
- Livingstone SR (2006) Sea turtle ecology and conservation on the north coast of Trinidad, West Indies. PhD Thesis, University of Glasgow, Scotland, 263 pp. <https://theses.gla.ac.uk/4323/>
- Lopes HS (1941) Sobre alguns sarcófagídeos neotrópicos da coleção do Museu Britânico (Diptera). *Arquivos de Zoologia, São Paulo* 2(16): 357–388. <https://doi.org/10.11606/issn.2176-7793.19412357-388>
- Lopes HS (1946) Contribuição ao conhecimento das espécies do gênero *Oxysarcodexia* Townsend, 1917 (Diptera Sarcophagidae). *Boletim de la Escuela Nacional de Veterinaria (Rio de Janeiro)* 1: 62–134.
- Lopes HS (1969) Family Sarcophagidae. In: Papavero N (Ed.) *A catalog of the Diptera of the Americas south of the United States* 103: 1–88. Departamento de Zoologia, Secretaria da Agricultura, São Paulo.
- Lopes HS (1982) On *Eumacronychia sternalis* Allen (Diptera, Sarcophagidae), with larvae living on eggs and hatchlings [sic] of the East Pacific Green Turtle. *Revista Brasileira de Biologia* 42: 425–429.
- MacArthur RH, Wilson EO (1967) *The theory of island biogeography*. Princeton University Press, 224 pp.
- Mello CA (1996) Revision of the genus *Farrimyia* Dodge, 1965 (Diptera, Sarcophagidae) – Parte I. *Revista brasileira de Biologia* 56: 459–471.
- Mello-Patiu CA (2016) Family Sarcophagidae. *Zootaxa* 4122(1): 884–903. <https://doi.org/10.11646/zootaxa.4122.1.75>
- Mello-Patiu CA, de Souza Neto SP (2007) Revisão das duas espécies de *Tapacura* Tibana & Lopes, 1985 (Diptera: Sarcophagidae: Sarcophaginae). *Biota Neotropica* 7(1): 1–4. <https://doi.org/10.1590/S1676-06032007000100021>
- Mello-Patiu CA, Paseto ML, Faria LS, Mendes J, Linhares AX (2014) Sarcophagid flies (Insecta, Diptera) from pig carcasses in Minas Gerais, Brazil, with nine new records from the Cerrado, a threatened neotropical biome. *Revista Brasileira de Entomologia* 58(2): 142–146. <https://doi.org/10.1590/S0085-56262014000200005>
- Mullen GR, Trauth SE, Sellers JC (1984) Association of a miltogrammine fly, *Eumacronychia nigricornis* Allen (Diptera: Sarcophagidae), with the brood burrows of *Sceloporus undulatus* (Latrielle) [sic] (Reptilia: Lacertillia [sic]). *Journal of the Georgia Entomological Society* 19: 1–6.
- Nassu MP, Thyssen PJ, Linhares AX (2014) Developmental rate of immatures of two fly species of forensic importance: *Sarcophaga (Liopygia) ruficornis* and *Microcerella halli* (Diptera: Sarcophagidae). *Parasitology Research* 113(1): 217–222. <https://doi.org/10.1007/s00436-013-3646-2>
- Oliveira TC, Vasconcelos SD (2010) Insects (Diptera) associated with cadavers at the Institute of Legal Medicine in Pernambuco, Brazil: Implications for forensic entomology. *Forensic Science International* 198(1–3): 97–102. <https://doi.org/10.1016/j.forsciint.2010.01.011>
- Pape T (1989) Revision of *Opsidia* Coquillett (Diptera: Sarcophagidae). *Entomologica Scandinavica* 20(2): 229–241. <https://doi.org/10.1163/187631289X00302>

- Pape T (1996) Catalogue of Sarcophagidae of the World (Insecta: Diptera). *Memoirs of Entomology International* 8: 1–558.
- Pape T (2024) Family: Sarcophagidae a taxonomic database to all flesh flies. <https://diptera.dk/sarco/index.php> [Accessed on 06 May 2024]
- Pape T, Méndez J (2004) Two new species of *Sarcophagtiopsis* (Diptera: Sarcophagidae). *Zootaxa* 485: 1–7. <https://doi.org/10.11646/zootaxa.485.1.1>
- Pape T, Blagoderov V, Mostovski MB (2011) Order Diptera Linnaeus, 1758. *Zootaxa* 3148: 222–229. <https://doi.org/10.11646/zootaxa.3148.1.42>
- Ramírez-Mora MA, Buenaventura E, Gómez-P LM, Amat E (2012) Updated checklist and new records of calyptratae carrion flies (Diptera, Schizophora) from Valle de Aburrá and other localities in Colombia. *Entomotropica* 27(1): 27–35. <https://doi.org/10.22201/ib.20078706e.2012.2.983>
- Ramírez-Mora MA, Durango-Manrique Y, Gomez GF (2022) New records and distributional data of (Diptera: Sarcophaginae) from Colombia. *Revista de la Sociedad Entomológica Argentina* 81(2): 49–56. <https://doi.org/10.25085/rsea.80205>
- Roy P, Dasgupta B (1977) *Sarcophaga ruficornis* Fabr. (Sarcophagidae: Diptera) as a parasite of the common indian toad. *Proceedings of the Indian Academy of Sciences* 86(3): 207–209. <https://doi.org/10.1007/BF03050949>
- Sánchez-Núñez DA, Mancera-Pineda JE (2012) Pollination and fruit set in the main neotropical mangrove species from the southwestern Caribbean. *Aquatic Botany* 103: 60–65. <https://doi.org/10.1016/j.aquabot.2012.06.004>
- Segura NA, Bonilla MA, Usaquén W, Bello García FJ (2011) Entomofauna resource distribution associated with pig cadavers in Bogotá DC. *Medical and Veterinary Entomology* 25(1): 46–52. <https://doi.org/10.1111/j.1365-2915.2010.00933.x>
- Smith JM (2001) Glasgow University Exploration Society Trinidad Expedition 2001. <http://www.glasgowexsoc.org.uk/reports/trinidad2001.pdf> [Accessed 15 January 2024]
- Sousa JRP, Carvalho-Filho FS, Esposito MC, Meyer M (2015) Distribution and abundance of necrophagous flies (Diptera: Calliphoridae and Sarcophagidae) in Maranhão, Northeastern Brazil. *Journal of Insect Science* 15(1): 70. <https://doi.org/10.1093/jisesa/iev054>
- Souza CM, Pape T, Thyssen PJ (2020) *Oxysarcodexia* Townsend, 1917 (Diptera: Sarcophagidae)-a centennial conspectus. *Zootaxa* 4841(1): 1–126. <https://doi.org/10.11646/zootaxa.4841.1.1>
- Sukontason KL, Piangjai S, Bunchu N, Chaiwong T, Sripakdee D, Boonsriwong W, Vogtsberger RC, Sukontason K (2006) Surface ultrastructure of the puparia of the blow fly, *Lucilia cuprina* (Diptera: Calliphoridae), and flesh fly, *Liosarcophaga dux* (Diptera: Sarcophagidae). *Parasitology Research* 98(5): 482–487. <https://doi.org/10.1007/s00436-005-0102-y>
- Sweeting MM (1958) The karstlands of Jamaica. *The Geographical Journal* 124(2): 184–199. <https://doi.org/10.2307/1790245>
- Szpila K, Mądra A, Jarmusz M, Matuszewski S (2015) Flesh flies (Diptera: Sarcophagidae) colonising large carcasses in Central Europe. *Parasitology Research* 114(6): 2341–2348. <https://doi.org/10.1007/s00436-015-4431-1>
- Tibana R, Lopes HS (1985) On Brazilian Sarcophagidae (Diptera) with description of two new genera and four new species. *Revista Brasileira de Entomologia* 29(2): 189–198.
- Toma R, Roel A, Miranda R (2018) First record of *Peckia* (*Sarcodexia*) *lambens* (Wiedemann, 1830) (Diptera: Sarcophagidae) parasitizing *Spodoptera frugiperda* (Smith, 1797) (Lepidoptera: Noctuidae) in Brazil. *Arquivos do Instituto Biológico* 84: e0302016. <https://doi.org/10.1590/1808-1657000302016>

- Toma R, Koller WW, Mello-Patiu CA, Mello RL (2020) New records of Sarcophagidae (Insecta: Diptera) collected in Cerrado fragments in the municipality of Campo Grande, Mato Grosso do Sul state, Brazil. *EntomoBrasilis* 13: e0873. <https://doi.org/10.12741/ebrasilis.v13.e0873>
- Townsend CHT (1892) A dextiid parasite of a longicorn beetle. *Journal of the Institute of Jamaica* 1: 105–106.
- Vairo KP, Mello-Patiu CA, Carvalho CJB (2011) Pictorial identification key for species of Sarcophagidae (Diptera) of potential forensic importance in southern Brazil. *Revista Brasileira de Entomologia* 55(3): 333–347. <https://doi.org/10.1590/S0085-56262011005000033>
- Vairo KP, Ururahy-Rodrigues A, Moura MO, Mello-Patiu CA (2014) Sarcophagidae (Diptera) with forensic potential in Amazonas: a pictorial key. *Tropical Zoology* 27(4): 140–152. <https://doi.org/10.1080/03946975.2014.981482>
- Vairo KP, Queiroz MMC, Mendonca PM, Barbosa RR, Carvalho CJB (2015) Description of immature stages of the flesh fly *Peckia* (*Sarcodexia*) *lambens* (Wiedemann) (Diptera: Sarcophagidae) provides better resolution for taxonomy and forensics. *Tropical Zoology* 28(3): 114–125. <https://doi.org/10.1080/03946975.2015.1057435>
- Valverde-Castro C, Buenaventura E, Sánchez-Rodríguez JD, Wolff M (2017) Flesh flies (Diptera: Sarcophagidae: Sarcophaginae) from the Colombian Guajira biogeographic Province, an approach to their ecology and distribution. *Zoologia* 34: 1–11. <https://doi.org/10.3897/zoologia.34.e12277>
- Vasconcelos SD, Soares TF, Costa DL (2014) Multiple colonization of a cadaver by insects in an indoor environment: first record of *Fannia trimaculata* (Diptera: Fanniidae) and *Peckia* (*Peckia*) *chrysostoma* (Sarcophagidae) as colonizers of a human corpse. *International Journal of Legal Medicine* 128(1): 229–233. <https://doi.org/10.1007/s00414-013-0936-2>
- Villet MH, Clitheroe C, Williams KA (2017) The temporal occurrence of flesh flies (Diptera, Sarcophagidae) at carrion-baited traps in Grahamstown, South Africa. *African Invertebrates* 58(1): 1–8. <https://doi.org/10.3897/AfrInvertebr.58.9537>
- Wells JD, Smith JL (2013). First report of *Blaesoxipha plinthopyga* (Diptera: Sarcophagidae) from a human corpse in the U.S.A. and a new state geographic record based on specimen genotype. *Journal of Forensic Sciences* 58(5): 1378–1380. <https://doi.org/10.1111/1556-4029.12246>
- Wilson A (2004) Jamaica the Land. Crabtree Publishing Company, New York, 32 pp.
- Wisniewska N, Lipinska MM, Golebiowski M, Kowalkowska AK (2019) Labellum structure of *Bulbophyllum echinolabium* JJ Sm. (section Lepidorrhiza Schltr., Bulbophyllinae Schltr., Orchidaceae Juss.). *Protoplasma* 256: 1185–1203. <https://doi.org/10.1007/s00709-019-01372-4>
- Yan L, Buenaventura E, Pape T, Kutty SN, Bayless KM, Zhang D (2021) A phylotranscriptomic framework for flesh fly evolution (Diptera, Calyptratae, Sarcophagidae). *Cladistics* 37: 540–558. <https://doi.org/10.1111/cla.12449>
- Yepes-Gaurisas D, Sánchez-Rodríguez JD, Mello-Patiu CA, Wolff ME (2013) Synanthropy of Sarcophagidae (Diptera) in La Pintada, Antioquia-Colombia. *Revista de Biología Tropical* 61(3): 1275–1287. <https://www.scielo.sa.cr/pdf/rbt/v61n3/a22v61n3.pdf>